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10/710,457	07/13/2004	Robert S. Condrashoff	NOR-1193	4456

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EXAMINER	
ZERVIGON, RUDY	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/710,457	CONDRASHOFF ET AL.	
	Examiner	Art Unit	
	Rudy Zervigon	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 July 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 12, 2008 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first electrode", "second electrode", "third electrode" must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: See Above.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 5, 6, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Okamura; Hideaki et al. (US 6251216 B1). Okamura teaches an apparatus (Figure 1) for processing a substrate (12; Figure 1; column 5; lines 23-45) with a plasma, comprising: a first electrode (13; Figure 1; column 5; lines 23-45); a second electrode (11; Figure 1; column 5; lines 23-45); a tubular separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3) directly contacting said first electrode (13; Figure 1; column 5; lines 23-45) and directly contacting said second electrode (11; Figure 1; column 5; lines 23-45) to define a sidewall (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3) extending between said first electrode (13; Figure 1; column 5; lines 23-45) and said second electrode (11; Figure 1; column 5; lines 23-45), said separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3) comprising a dielectric material ("synthetic quartz"; column 6; lines 1-3) capable of electrically isolating said

first electrode (13; Figure 1; column 5; lines 23-45) from said second electrode (11; Figure 1; column 5; lines 23-45), and said tubular separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3), said first electrode (13; Figure 1; column 5; lines 23-45), and said second electrode (11; Figure 1; column 5; lines 23-45) bounding a vacuum enclosure (inside volume 25); a process gas port (14; Figure 1; column 5; lines 23-45) for introducing a process gas to said vacuum enclosure (inside volume 25); and a vacuum port (22; Figure 1; column 5; lines 23-45) for evacuating said vacuum enclosure (inside volume 25) to a pressure suitable for generating the plasma from the process gas in said vacuum enclosure (inside volume 25), as claimed by claim 1

Okamura further teaches:

i. The apparatus (Figure 1) of claim 1 further comprising: a vacuum pump (23; Figure 1; column 5; lines 23-45) coupled with said vacuum port (22; Figure 1; column 5; lines 23-45) and operative for evacuating said vacuum enclosure (inside volume 25) to said pressure suitable for generating the plasma from the process gas in said vacuum enclosure (inside volume 25), as claimed by claim 5

ii. The apparatus (Figure 1) of claim 1 further comprising: a process gas supply (16) coupled with said process gas port (14; Figure 1; column 5; lines 23-45) for introducing the process gas to said vacuum enclosure (inside volume 25), as claimed by claim 6

iii. The apparatus of claim 1 wherein said first electrode (13; Figure 1; column 5; lines 23-45) is adapted to support the substrate (12; Figure 1; column 5; lines 23-45) in said vacuum enclosure (inside volume 25), as claimed by claim 18

iv. The apparatus of claim 1 wherein said first electrode (13; Figure 1; column 5; lines 23-45) has a generally-planar first surface, said second electrode (11; Figure 1; column 5;

lines 23-45) has a generally-planar second surface confronting said first surface of said first electrode (13; Figure 1; column 5; lines 23-45), and said first surface of said first electrode (13; Figure 1; column 5; lines 23-45) and said second surface of said second electrode (11; Figure 1; column 5; lines 23-45) are directly contacted by said tubular separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3), as claimed by claim 20

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 2, 3, 8, 9, 10, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura; Hideaki et al. (US 6251216 B1) in view of Shan; Hong Ching et al. (US 5891350 A). Okamura is described above. Okamura does not teach:

i. The apparatus (Figure 1) of claim 1 further comprising: a vacuum manifold coupled with said vacuum port (22; Figure 1; column 5; lines 23-45), said vacuum manifold being electrically isolated from said first electrode (13; Figure 1; column 5; lines 23-45) and said second electrode (11; Figure 1; column 5; lines 23-45), as claimed by claim 2

ii. The apparatus (Figure 1) of claim 2 wherein said vacuum manifold includes an enclosed volume proximate to said vacuum port (22; Figure 1; column 5; lines 23-45) and further comprising: an insert of an electrically insulating material ("synthetic quartz"; column 6; lines 1-3) positioned inside said enclosed volume, said insert including a first plurality of passages coupling said vacuum manifold with said vacuum port (22; Figure 1; column 5; lines 23-45), as claimed by claim 3

iii. The apparatus (Figure 1) of claim 1 further comprising a substrate holder positioned inside said vacuum enclosure (inside volume 25) and configured to support the substrate (12; Figure 1; column 5; lines 23-45) on said first electrode (13; Figure 1; column 5; lines 23-45), as claimed by claim 8

iv. The apparatus (Figure 1) of claim 8 wherein said substrate holder is electrically coupled with said first electrode (13; Figure 1; column 5; lines 23-45), as claimed by claim 9

v. The apparatus (Figure 1) of claim 1 further comprising: an electrically-conductive enclosure surrounding said separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3), said first electrode (13; Figure 1; column 5; lines 23-45), and said second electrode (11; Figure 1; column 5; lines 23-45), said first electrode (13; Figure 1; column 5; lines 23-45) and said second electrode (11; Figure 1; column 5; lines 23-45) each separated from said conductive enclosure by an air gap (gas volume inside 18; Figure 1),

as claimed by claim 10. Applicant's gas identity as being "air" is a claim requirement of intended use of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

vi. The apparatus of claim 1 wherein said second electrode (11; Figure 1; column 5; lines 23-45) is movable relative to said first electrode (13; Figure 1; column 5; lines 23-45) between a first position to close said vacuum enclosure (inside volume 25) and a second position for transferring the substrate (12; Figure 1; column 5; lines 23-45) to and from said vacuum enclosure (inside volume 25), and said tubular separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3) configured for forming the vacuum-tight seal between said first electrode (13; Figure 1; column 5; lines 23-45) and said second electrode (11; Figure 1; column 5; lines 23-45) when said second electrode (11; Figure 1; column 5; lines 23-45) is moved to said first position, as claimed by claim 19

Shan teaches:

v. The apparatus (Figure 1,3 - see common numbers) of claim 1 further comprising: a vacuum manifold (70, Figure 4; column 15; line 62 - column 16, line25) coupled with said vacuum port (50, Figure 1,3; column 3; lines 30-45), said vacuum manifold (70,

Figure 4; column 15; line 62 - column 16, line25) being electrically isolated from said first electrode (30; Figure 1,3; column 3; lines 34-41) and said second electrode (24," A_{anode}"; Figure 1,3; column 7; lines 1-15), as claimed by claim 2

vi. The apparatus (Figure 1,3 - see common numbers) of claim 2 wherein said vacuum manifold (70, Figure 4; column 15; line 62 - column 16, line25) includes an enclosed volume proximate to said vacuum port (50, Figure 1,3; column 3; lines 30-45) and further comprising: an insert (74, 76, or 78; Figure 4; column 15; line 62 - column 16, line25) of an electrically insulating material (column 16, lines 16-25) positioned inside said enclosed volume, said insert (74, 76, or 78; Figure 4; column 15; line 62 - column 16, line25) including a first plurality of passages (72 in 74; Figure 4; column 15; line 62 - column 16, line25) coupling said vacuum manifold (70, Figure 4; column 15; line 62 - column 16, line25) with said vacuum port (50, Figure 1,3; column 3; lines 30-45), as claimed by claim 3

vii. The apparatus (Figure 1,3 - see common numbers) of claim 1 further comprising a substrate holder (38; Figure 1) positioned inside said processing region and configured to support the substrate ("silicon wafer"; throughout specification) on said first electrode (30; Figure 1,3; column 3; lines 34-41), as claimed by claim 8

viii. The apparatus (Figure 1,3 - see common numbers) of claim 8 wherein said substrate holder (38; Figure 1) is electrically coupled with said first electrode (30; Figure 1,3; column 3; lines 34-41), as claimed by claim 9

ix. The apparatus (Figure 1,3 - see common numbers) of claim 1 further comprising: an electrically-conductive enclosure (20; Figure 1) surrounding said separating member (10;

Figure 1, not shown in Figure 3; column 8; lines 32-39), said first electrode (30; Figure 1,3; column 3; lines 34-41), and said second electrode (24," A_{anode}"; Figure 1,3; column 7; lines 1-15), said first electrode (30; Figure 1,3; column 3; lines 34-41) and said second electrode (24," A_{anode}"; Figure 1,3; column 7; lines 1-15) each separated from said conductive enclosure (20; Figure 1) by an air gap (gas volume inside 18; Figure 1), as claimed by claim 10. Applicant's gas identity as being "air" is a claim requirement of intended use of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

x. The apparatus of claim 1 wherein said second electrode (24," A_{anode}"; Figure 1,3; column 7; lines 1-15) is movable relative to said first electrode (30; Figure 1,3; column 3; lines 34-41) between a first position to close said vacuum enclosure and a second position for transferring the substrate to and from said vacuum enclosure, and said tubular separating member (10; Figure 1, not shown in Figure 3; column 8; lines 32-39) configured for forming the vacuum-tight seal between said first electrode (30; Figure 1,3; column 3; lines 34-41) and said second electrode (24," A_{anode}"; Figure 1,3; column 7; lines 1-15)

when said second electrode (24," A_{anode}"; Figure 1,3; column 7; lines 1-15) is moved to said first position, as claimed by claim 19

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Okamura to add Shan's exhaust inserts (74, 76, or 78; Figure 4; column 15; line 62 - column 16, line25) and substrate holder (38; Figure 1), inclusive, to use a seperable electrically-conductive enclosure for Okamura enclosure (10; Figure 1).

Motivation for Okamura to add Shan's exhaust inserts (74, 76, or 78; Figure 4; column 15; line 62 - column 16, line25) and substrate holder (38; Figure 1) is for "reducing the deposition of unwanted particles on the exhaust pump componentd" as taught by Shan (abstract), and for "protecting the top perimeter of the cathode from exposure to plasma" as taught by Shan (column 4; lines 21-25).

Motivatrion to use a *seperable* electrically-conductive enclosure for Okamura enclosure (10; Figure 1) is for transferring the processed wafers.

8. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura; Hideaki et al. (US 6251216 B1) in view of Suntola; Tuomo et al. (US 5711811 A) and Maher, Jr.; Joseph A. et al. (US 4381965 A). Okamura is disccused above. Okamura does not teach:

i. An apparatus (Figure 1) for plasma processing a plurality of substrates (12; Figure 1; column 5; lines 23-45), the apparatus comprising: a first electrode (13; Figure 1; column 5; lines 23-45); a second electrode (11; Figure 1; column 5; lines 23-45) positioned with a spaced apart relationship relative to said first electrode (13; Figure 1; column 5; lines 23-45); a third electrode positioned between said first electrode (13; Figure 1; column 5; lines 23-45) and said second electrode (11; Figure 1; column 5; lines 23-45); a first

tubular separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3) directly contacting said first electrode (13; Figure 1; column 5; lines 23-45) and directly contacting said second electrode (11; Figure 1; column 5; lines 23-45) to define a first sidewall extending between said first electrode (13; Figure 1; column 5; lines 23-45) and said second electrode (11; Figure 1; column 5; lines 23-45), said first tubular separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3), said first electrode (13; Figure 1; column 5; lines 23-45), and said third electrode, bounding a first vacuum enclosure (inside volume 25), said first electrode (13; Figure 1; column 5; lines 23-45) configured to support one of the plurality of substrates (12; Figure 1; column 5; lines 23-45) in said first vacuum enclosure (inside volume 25) for plasma processing, and said first separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3) comprising a dielectric material ("synthetic quartz"; column 6; lines 1-3) for electrically isolating said first electrode (13; Figure 1; column 5; lines 23-45) from said third electrode; a second separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3) directly contacting said second electrode (11; Figure 1; column 5; lines 23-45) and directly contacting said third electrode to define a second sidewall extending between said second electrode (11; Figure 1; column 5; lines 23-45) and said third electrode, said second tubular separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3), said first electrode (13; Figure 1; column 5; lines 23-45), and said third electrode bounding a second vacuum enclosure (inside volume 25), said third electrode configured to support one of the plurality of substrates (12; Figure 1; column 5; lines 23-45) in said second vacuum enclosure (inside volume 25) for plasma processing, and said second

separating member (25; Figure 1 - "synthetic quartz"; column 6; lines 1-3) comprising a dielectric material for electrically isolating said second electrode (11; Figure 1; column 5; lines 23-45) from said third electrode; at least one process gas port (14; Figure 1; column 5; lines 23-45) configured for introducing a process gas to said first vacuum enclosure (inside volume 25) and second vacuum enclosure (inside volume 25); and a vacuum port (22; Figure 1; column 5; lines 23-45) for evacuating said vacuum enclosure (inside volume 25) to a pressure suitable for generating the plasma from the process gas in said first vacuum enclosure (inside volume 25) and said second vacuum enclosure (inside volume 25), as claimed by claim 15

ii. The apparatus (Figure 1) of claim 15 wherein said vacuum port (22; Figure 1; column 5; lines 23-45) is defined in said second electrode (11; Figure 1; column 5; lines 23-45), as claimed by claim 16

iii. The apparatus (Figure 1) of claim 16 wherein said first electrode (13; Figure 1; column 5; lines 23-45) includes a first process gas port (14; Figure 1; column 5; lines 23-45) for introducing the process gas to said first vacuum enclosure (inside volume 25) and said third electrode includes a second process gas port (14; Figure 1; column 5; lines 23-45) for introducing the process gas to said second vacuum enclosure (inside volume 25), as claimed by claim 17

Suntola teaches:

iv. An apparatus (Figure 3) for plasma (column 1; lines 42-44) processing a plurality of substrates (37; Figure 3), comprising: a first separating member (32; Figure 3; column 11, lines 23-27) for forming a vacuum-tight seal between a first chamber (38; Figure 3) and a

second chamber (38; Figure 3) and defining a first evacuatable vacuum enclosure (inside volume 25) (38; Figure 3) between a first chamber (38; Figure 3) and a second chamber (38; Figure 3), a first chamber (38; Figure 3) configured to support one of the plurality of substrates (37; Figure 3) in first vacuum enclosure (inside volume 25) (38; Figure 3) for plasma (column 1; lines 42-44) processing, and said first separating member (32; Figure 3; column 11, lines 23-27) electrically isolating a first chamber (38; Figure 3) from a second chamber (38; Figure 3); a second separating member (32; Figure 3; column 11, lines 23-27) for forming a vacuum-tight seal between a third chamber (38; Figure 3) and a second chamber (38; Figure 3) to define a second evacuatable vacuum enclosure (inside volume 25) (38; Figure 3) between a third chamber (38; Figure 3) and a second chamber (38; Figure 3), a second chamber (38; Figure 3) configured to support one of the plurality of substrates (37; Figure 3) in said second vacuum enclosure (inside volume 25) (38; Figure 3) for plasma (column 1; lines 42-44) processing, and said second separating member (32; Figure 3; column 11, lines 23-27) electrically isolating a third chamber (38; Figure 3) from a second chamber (38; Figure 3); at least one process gas port (28, 30; Figure 3) for introducing a process gas to first vacuum enclosure (inside volume 25) (38; Figure 3) and second vacuum enclosure (inside volume 25) (38; Figure 3); and a vacuum port (25; Figure 3) for evacuating said vacuum enclosure (inside volume 25) to a pressure suitable for generating the plasma (column 1; lines 42-44) from the process gas in first vacuum enclosure (inside volume 25) (38; Figure 3) and said second processing space (38; Figure 3) - claim 15

v. The apparatus (Figure 3) of claim 15 wherein said vacuum port (25; Figure 3) is defined in a third chamber (38; Figure 3), as claimed by claim 16

vi. The apparatus (Figure 3) of claim 16 wherein a first chamber (38; Figure 3) includes a first process gas port (28, 30; Figure 3) for introducing the process gas to first vacuum enclosure (inside volume 25) (38; Figure 3) and a second chamber (38; Figure 3) includes a second process gas port (28, 30; Figure 3) for introducing the process gas to said second process region, as claimed by claim 17

Maher teaches a wafer plasma processing apparatus (Figure 4) including plural parallel electrodes 19a,b-25a,b each interposed between insulating dielectric layers 19c-25c.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Suntola's apparatus (Figure 3) with Maher's plasma generating means to Okamura's apparatus.

Motivation to add Suntola's apparatus (Figure 3) with Maher's plasma generating means to Okamura's apparatus includes, among plural motivations, for plasma processing as taught by Suntola (column 1; lines 42-44), and for processing plural substrates for greater through-put compared to Okamura as taught by Suntola.

9. Claims 4, 7, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura; Hideaki et al. (US 6251216 B1) and Shan; Hong Ching et al. (US 5891350 A) in view of Hirooka; Takaaki (US 6700089 B1). Okamura and Shan are discussed above. Okamura and Shan do not teach:

i. The apparatus (Figure 1) of claim 3 wherein said vacuum port (22; Figure 1; column 5; lines 23-45) is defined by a second plurality of passages extending through said first

electrode (13; Figure 1; column 5; lines 23-45) and registered with said first plurality of passages, as claimed by claim 4

ii. The apparatus (Figure 1) of claim 1 wherein said second electrode (11; Figure 1; column 5; lines 23-45) includes a plurality of openings arranged in a pattern effective for communicating process gas from said process gas port (14; Figure 1; column 5; lines 23-45) to said vacuum enclosure (inside volume 25), as claimed by claim 7

iii. The apparatus (Figure 1) of claim 10 wherein said enclosure includes a base and a lid movable relative to said lid between opened and closed positions for accessing said vacuum enclosure (inside volume 25), said lid carrying said first electrode (13; Figure 1; column 5; lines 23-45) for movement relative to said base, as claimed by claim 11

iv. The apparatus (Figure 1) of claim 10 further comprising a coolant port in said lid for supplying a flow of a coolant fluid to said air gap for cooling said first electrode (13; Figure 1; column 5; lines 23-45) and said second electrode (11; Figure 1; column 5; lines 23-45), as claimed by claim 12

v. The apparatus (Figure 1) of claim 1 wherein said first electrode (13; Figure 1; column 5; lines 23-45) includes said vacuum port (22; Figure 1; column 5; lines 23-45) and said second electrode (11; Figure 1; column 5; lines 23-45) includes said process gas port (14; Figure 1; column 5; lines 23-45), as claimed by claim 13

vi. The apparatus (Figure 1) of claim 13 wherein said second electrode (11; Figure 1; column 5; lines 23-45) includes a plurality of gas openings coupled with said process gas port (14; Figure 1; column 5; lines 23-45), said plurality of gas openings positioned in said second electrode (11; Figure 1; column 5; lines 23-45) to distribute process gas across a

confronting surface of the substrate (12; Figure 1; column 5; lines 23-45), as claimed by claim 14

Hirooka teaches a plasma processing apparatus (Figure 1,2) including:

i. The apparatus (Figure 1,2) of claim 3 wherein a vacuum port (128; Figure 1,2) is defined by a second plurality of passages (126; Figure 1,2) extending through a first electrode (108+126; Figure 1) - claim 4

ii. The apparatus (Figure 1,2) of claim 1 wherein a second electrode (124; Figure 2) includes a plurality of openings (124a; Figure 2) arranged in a pattern effective for communicating process gas from a process gas port (194; Figure 2) to a vacuum enclosure (102; Figure 2), as claimed by claim 7

iii. The apparatus (Figure 1,2) of claim 10 wherein a enclosure includes a base (104; Figure 2) and a lid (206; Figure 2,3a) movable relative to a lid (206; Figure 2,3a) between opened and closed positions for accessing a vacuum enclosure (102; Figure 2), a lid (206; Figure 2,3a) carrying a first electrode (108+126; Figure 1) for movement relative to a base (104; Figure 2), as claimed by claim 11

iv. The apparatus (Figure 1,2) of claim 10 further comprising a coolant port (172c; Figure 2) in a lid (206; Figure 2,3a) for supplying a flow of a coolant fluid to a air gap (172c; Figure 2) for cooling a first electrode (108+126; Figure 1) and a second electrode (124; Figure 2), as claimed by claim 12

v. The apparatus (Figure 1,2) of claim 1 wherein a first electrode (108+126; Figure 1) includes a vacuum port (128; Figure 1,2) and a second electrode (124; Figure 2) includes a process gas port (194; Figure 2), as claimed by claim 13

vi. The apparatus (Figure 1,2) of claim 13 wherein a second electrode (124; Figure 2) includes a plurality of gas openings (124a; Figure 2) coupled with a process gas port (194; Figure 2), a plurality of gas openings (124a; Figure 2) positioned in a second electrode (124; Figure 2) to distribute process gas across a confronting surface of the substrate (12; Figure 1; column 5; lines 23-45), as claimed by claim 14

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Okamura's lid and lower electrode with Hirooka's lid and lower electrode.

Motivation to replace Okamura's lid and lower electrode with Hirooka's lid and lower electrode is for improved hermiticity and operating speed (Hirooka:column 2; lines 10-27), and for wafer temperature control (Hirooka:column 7; lines 1-3), respectively.

Response to Arguments

10. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new grounds of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Friday schedule from 9am through 5pm. The official fax phone number for the 1792 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435

/Rudy Zervigon/

Primary Examiner, Art Unit 1792

Saturday, April 26, 2008